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NAS

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Capture Images, Capture Savings

The National Institutes of Health and your company are both drowning in paper. But, do you expect to **save \$15 million** by streamlining processes?

Dr. Steven J. Hausman, a deputy institute director at the National Institutes of Health

INSIDE:
The Annual
VAR/Integrator Locator

A man with a mustache, wearing a dark suit, white shirt, and patterned tie, is smiling and leaning over a desk. The desk is covered with large stacks of papers and documents. In the background, there are shelves filled with many hanging file folders. The lighting is somewhat dim, creating a professional office atmosphere.

Installation Profile

Technology User: The National Institutes of Health (NIH), part of the Department of Health and Human Services, is headquartered in Bethesda, MD. Composed of 27 centers and institutes, the NIH conducts and contracts research in the field of medicine. The NIH is expected to have a 2003 budget of \$27 billion, of which 80% will be awarded to outside institutions to perform research.

Problem: The NIH receives about 50,000 hard-copy grant applications each year from institutions requesting funding. Reaching a size of more than a thousand pages in length, the applications must be processed in a timely manner. Further complicating matters is the Government Paper Elimination Act, which sets a deadline for federal agencies to replace paper with electronic formats.

Solution: Using document conversion services from Quality Associates, Inc., the NIH converts incoming paper applications to PDFs saved on CDs, which are distributed to application reviewers. Additionally, by July 2003, the NIH will also accept electronic grant application submissions.

The NIH's Dr. Steven J. Hausman says that processing grant applications means handling hundreds of millions of paper documents.

Capture Images, Capture Savings

▲ The National Institutes of Health and your company both handle tons of paper. But, does your company expect to save \$15 million by streamlining its processes?

by Ed Hess

The federal government has never claimed to be a nimble organization. Sweeping changes happen over the course of years, not days or months. It takes time to stop the inertia that keeps the government moving forward and then, ultimately, reverse its direction.

So, when the Government Paperwork Elimination Act (GPEA) was signed into law on October 21, 1998, all parties could envision a positive outcome — at some point in the future. In five years from the signing (October 21, 2003), “individuals or entities that deal with federal agencies must have the option to submit information or transact with an agency electronically, when practicable, and to maintain records electronically, when practicable.” In other words, the GPEA aimed to replace paper with digital data.

It's been more than four years since the GPEA was enacted. And for the agencies that have strived to meet the Act's objectives, the payoff in hard-dollar ROI and improved service has been significant. By using document imaging and management technologies, workflow, and portable storage media, for instance, the National Institutes of Health (NIH) has saved millions of dollars in copying and distribution costs in 2002 alone. Additionally, the turnaround for processing documents at the NIH has been reduced from weeks to days.

The GPEA will not “eliminate” paper as much as it will reduce paper and improve operational processes. And, that's a noble goal for government and business alike. The technologies and services employed by the NIH are accessible to any business. And as the NIH's results prove, the bigger the problem, the bigger the opportunity for savings.

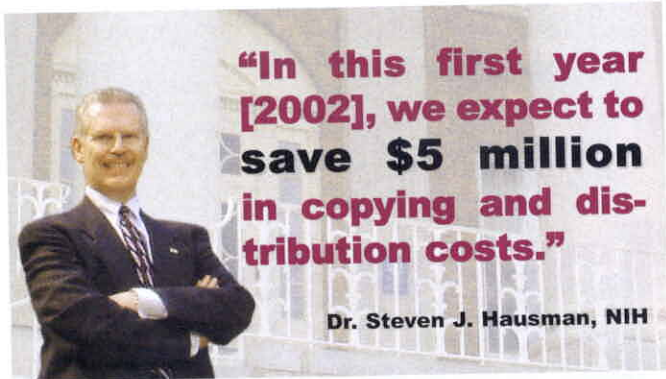
Costs Rise When Distributing Paper

To get a sense of the paperwork problem confronting the NIH, one must consider the size of the entity. For example, the NIH would fall squarely in the middle of the Fortune 100 list if its estimated 2003 budget of \$27 billion was compared to other companies' revenue numbers. Unlike businesses, however, the NIH gives most of its budget away in the form of grants and contracts. Roughly 4% of the total budget is used to cover NIH administration costs, and another 10% is used to conduct intramural research on the NIH campus. That leaves about \$21 billion in 2003 to fund extramural research that takes place primarily throughout the United States. “Our budget has almost doubled over the last five years, so we're talking about a very significant amount of money to be spent on research. The obvious question is, ‘How do you distribute all of this money?’” asks Dr. Steven J. Hausman, a deputy institute director at the NIH. “The answer is that people apply for the money.”

The application process is hardly a tidy procedure. The

Photos by Brian Slanger

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▲	Document Imaging
▼	Workflow



NIH receives between 45,000 and 55,000 applications annually, and Hausman notes that those numbers continue to rise each year. At a minimum, the grant application might be 20 pages in length. But, it's not unusual to have an application that runs more than a thousand pages. Most fall somewhere in the middle of that spectrum. "Every grant is reviewed by a study section, which is typically a group of scientists numbering about 20. Each one of those study section members needs a copy of the grant application. In terms of paperwork, you can see where all this activity is headed," comments Hausman.

To handle this volume of work requires a separate support staff at the NIH that manages incoming applications during the three major deadline dates throughout the year. Between the original application and the resulting copies for study section members, Hausman estimates that the NIH has to handle more than 200 million pieces

of paper relating to grant applications. This doesn't take into account the miscellaneous correspondence that also accompanies or trails most applications. "On top of the copying costs, there are the mailing costs. The applications are placed in boxes and sent by FedEx to the relevant parties," explains Hausman. "FedEx provides us with a level of security [i.e. package tracking, signing for package release] and expediency. But, obviously, those benefits come at a price."

Document Conversion Cuts Millions In Administration Costs

Before Congress passed the GPEA, the NIH had already been working to cut back on its paper pushing. In the late 1980s, a precursor of the current Electronic Research Administration (eRA) effort was formed within the NIH to accomplish that very task. "We had a vision of receiving applications electronically, but the technology just wasn't ready at that point. This was a time before the Internet — receiving data by e-mail meant using modems and mainframes. Plus, the software we required was pretty immature," recalls Hausman. The goals of the eRA remained intact, and the GPEA — and technological advances — breathed new life into that once out-of-reach initiative.

The GPEA does not mandate that all interactions with the federal government must be handled electronically. It simply states that individuals must have the option to conduct their business electronically. That means the

Paper Puts A Strain On Performance, Budget

You probably have no idea how much time and energy your enterprise wastes on handling paper documents. If you're having trouble imagining the hard costs associated with manual document management, consider some statistics from a PricewaterhouseCoopers study that found that professionals spend 5% to 15% of their time reading information, but up to 50% of their time looking for pertinent data. Additionally, the average organization:

- makes 19 copies of each document
- spends \$20 in labor to file each document
- spends \$120 in labor searching for each misfiled document
- loses 1 out of every 20 documents
- spends 25 hours recreating each lost document
- spends 400 hours per year searching for lost files.

Converting paper to digital content requires more than a document scanner and an employee with some free time. In the case of the National Institutes of Health (NIH), for example, there are millions of archived legacy grant files with tens of thousands more active grant applications arriving every year. To handle this volume, Quality Associates, Inc. (QAI) was selected

to convert all the hard-copy active grant applications and legacy grant files to an electronic format. Using this conversion process as a starting point, QAI and NIH can then branch out to implement and improve the entire document management and workflow operations within the enterprise. Typically, this type of engagement includes hardware and software integration, mass storage systems, and employee training.

High-volume document conversion can be performed both on-site (at a client's facility) or off-site (at a QAI facility). Because of the sensitive nature of the document handling and conversion process, end users demand a high level of reliability, security, and efficiency. QAI has developed numerous automated procedures for handling the unique content and layouts of every CD-ROM order while adapting to the fluctuating volume of submissions.

The grant application receipt data from the NIH Center for Scientific Review (CSR) indicates that the total number of grant applications processed by QAI in 2002 will exceed 48,000. This is equivalent to terabytes of data and millions of pages.

For More Info. On Quality Associates, Inc.

Go To www.qualityassociatesinc.com

“FedEx provides us with a level of security and expediency. But, obviously, those benefits come at a price.”

Dr. Steven J. Hausman, NIH

NIH, for example, must be equipped to handle both paper and electronic submissions by the 2003 deadline. “We will prefer to receive applications electronically, but we have not mandated this type of format. When given the choice, we think many applicants will choose the electronic submission. And, that number will rise steadily over time,” states Hausman.

Currently, grant applications pouring into the NIH are in a single format — paper. However, the NIH has radically improved its processing procedures. The incoming applications are scanned and the now digital data is handed off to Quality Associates, Inc. (QAI), which runs a small service bureau at the NIH. QAI takes the resulting TIF images and converts them to PDF files equipped with indices and bookmarks. The PDFs also contain OCR (optical character recognition) text that makes it possible for study section members to perform keyword searches on the PDF files. Once complete, these PDF files are burned to CDs and distributed by FedEx to the appropriate members of the study section. Additionally, the now electronic version of the grant application is saved in the NIH’s proprietary workflow system, called IMPAC. The database, which currently holds upwards of 50,000 applications, is more than 200 GB in size and is searchable by such variables as grant application number, topic, and applicant institution.

Prior to contracting QAI’s services, grant applications would typically take three to four weeks to be processed before arriving on the desks of NIH review staff. Now, the PDF version of the application is likely to show up within a few days of its arrival at NIH headquarters. And instead of dealing with a box filled with weighty documents, reviewers simply receive an envelope containing a CD. In 2002, the NIH is on track to produce and distribute more than 16,000 CDs and save big-time in administration costs. “In this first year [2002], we expect to save \$5 million in copying and distribution costs. In 2003, we expect our savings to increase to \$15 million,” says Hausman. “That doesn’t include the intangibles like the injuries that are caused by lifting heavy boxes of paper, organizing that paper within an office, and the cost of the space required to store documents in offices.”

Online Tools Reach Out To Citizen Customers

To completely comply with the GPEA, the NIH is ramp-

ing up to accept grant applications electronically by July 2003. This method would allow users to forego the production of a hard-copy application in favor of directly uploading the completed application to a secure site run by the NIH. The resulting XML (extensible markup language) data stream would be downloaded to a central NIH database and made available to reviewers through a browser interface. “Once the system is up and running, we hope that 25% of the grant applications will initially arrive electronically. And that number will rise continually,” predicts Hausman.

The rise in electronic submission of grant applications will eventually lead to a declining need to scan, convert, and save what were previously hard-copy applications. However, the need to convert paper to electronic formats at the NIH will not subside anytime soon. The National Cancer Center, for instance, has a linear mile of shelving that holds past grant applications in all their

STORAGE SOUND BYTE

CD Technology Continues Evolution

The NIH (National Institutes of Health) is hardly alone as a user of CDs to store and distribute data. In fact, CD remains one of the most effective storage mediums for end users that are looking to distribute scanned documents and reports or simply archive rarely accessed legacy files.

CDs still retain their familiar 120 mm format, but the drives that spin CDs are constantly changing. Most recently, recording speeds of CD-R (CD-recordable) drives increased to 40X from the 24X speed that many users employed. “To burn 650 MB of data on a CD with a 12X drive takes about eight minutes. The 24X drive reduced that burn time to five minutes. With the 40X, you can burn that same 650 MB of data in about three minutes,”

explains Dawn Wortman, senior marketing manager at Maxell.

Following on the heels of higher performance CD-R drives are 40X compatible CDs. The 40X discs have a capacity of up to 700 MB and are backward compatible with all previous CD-R drives. In the case of Maxell, the company improved the durability of its CDs



A 40X CD-R drive and 40X media burn data 40% faster than 24X predecessors.

with the release of its 40X CD-Rpro. The recordable discs have undergone a new triple-coating process to resist scratches and further increase the life span of the archival media. For enterprises and individual users, CDs still remain an economical storage choice. “In bulk quantities, users can buy the CD-Rpro discs for between 5 and 10 cents apiece,” adds Wortman. “With the jewel case, the price increases to about 80 cents per disc.”

▼	Content Management
▲	Document Imaging
▼	Workflow

eight-and-a-half-by-eleven glory. Eventually, the NIH would like to convert all archived documents in its institutes and centers to an electronic format.

No one would suggest that companies should be run like the federal

government. But, in this particular instance, government and business are kindred spirits — “both drowning in paper,” notes Hausman. And, issuing a GPEA-style act within your company might not be such a bad idea. □

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PDA Replaces Paper



WLANs connect hospital and patient data with doctors on the go.

While many hospital patients benefit from the research conducted under the auspices of the NIH (National Institutes of Health), it takes wireless technology to improve the bedside manner of some physicians. More specifically, doctors are now taking advantage of WLANs (wireless local area networks) to access hospital and clinical information systems while roaming throughout their facilities.

In the case of InfoLogix, a provider of wireless computing hardware and consulting services, its healthcare customers can be equipped with mobile medical carts that support a wirelessly enabled PC and medical equipment. “Regardless of their physical location, healthcare professionals can utilize these technologies to collect, retrieve, review, analyze, and use data over a secure network. This enables strategic medical decisions to be based on real-time information,” explains Richard Hodge, executive vice president of sales and marketing and one of the founders of InfoLogix.

Using this type of mobile solution, for instance, significantly improves patient care. Healthcare providers use scanners to ensure a real-time three-way match (caregiver, medication, patient) against the “five rights” — right caregiver, medication, patient, dosage, and time.



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